

US EPA ARCHIVE DOCUMENT

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Seattle, WA	Boron	0.01570	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	4.99000	0.00956	0.00451	0	0.00886	0.00723	0	0.00050	0.00020	0.00006	0	0.00200	0.00600	0	NA	0.00826
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	37.20000	0.06690	0.03160	0	0.06510	0.05290	0	0.00400	0.00050	0.00010	0	0.00700	0.02000	0	NA	0.02760
	Micronutrients	0.02370	0.00004	0.00002	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00152	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.12000	0.01430	0.00676	0	0.01440	0.01170	0	0.00081	0.00020	0.00007	0	0.00300	0.00700	0	NA	0.01027
	NPK for P2O5	2.54000	0.00497	0.00235	0	0.00463	0.00375	0	0.00030	0.00009	0.00003	0	0.00100	0.00300	0	NA	0.00412
	P2O5 - 1	4.27000	0.00785	0.00370	0	0.00757	0.00616	0	0.00040	0.00010	0.00004	0	0.00100	0.00400	0	NA	0.00514
	Potash	0.01620	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	S as Nutrient	2.19000	0.00415	0.00196	0	0.00395	0.00323	0	0.00020	0.00004	0.00001	0	0.00050	0.00100	0	NA	0.00155
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05830	0.00011	0.00005	0	0.00010	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
	Albuquerque, NM	Boron	0.01690	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.46000	0.00367	0.00173	0	0.00834	0.00619	0	0.00060	0.00006	0.00002	0	0.00200	0.00500	0	NA	0.00708
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		39.60000	0.02520	0.01190	0	0.05980	0.04420	0	0.00400	0.00020	0.00006	0	0.00700	0.01000	0	NA	0.01726
Micronutrients		0.02570	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00164	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.81000	0.00597	0.00282	0	0.01370	0.01020	0	0.00090	0.00008	0.00003	0	0.00200	0.00600	0	NA	0.00811
NPK for P2O5		2.78000	0.00189	0.00089	0	0.00429	0.00321	0	0.00030	0.00003	0.00001	0	0.00100	0.00200	0	NA	0.00304
P2O5 - 1		4.66000	0.00300	0.00141	0	0.00729	0.00550	0	0.00050	0.00004	0.00002	0	0.00100	0.00300	0	NA	0.00406
Potash		0.01760	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.41000	0.00156	0.00074	0	0.00365	0.00270	0	0.00020	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06350	0.00004	0.00002	0	0.00010	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Atlanta, GA		Boron	0.01490	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	4.82000	0.00851	0.00401	0	0.00826	0.00661	0	0.00050	0.00010	0.00005	0	0.00200	0.00500	0	NA	0.00715
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	34.80000	0.04530	0.02140	0	0.06010	0.04500	0	0.00400	0.00040	0.00010	0	0.00700	0.01000	0	NA	0.01750
	Micronutrients	0.02250	0.00004	0.00002	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00143	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	7.78000	0.01290	0.00611	0	0.01360	0.01080	0	0.00080	0.00020	0.00006	0	0.00200	0.00600	0	NA	0.00826
	NPK for P2O5	2.40000	0.00424	0.00200	0	0.00417	0.00334	0	0.00030	0.00008	0.00003	0	0.00100	0.00300	0	NA	0.00411
	P2O5 - 1	4.09000	0.00625	0.00295	0	0.00703	0.00548	0	0.00040	0.00010	0.00004	0	0.00100	0.00400	0	NA	0.00514
	Potash	0.01560	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.10000	0.00333	0.00157	0	0.00357	0.00285	0	0.00020	0.00003	0.00001	0	0.00050	0.00100	0	NA	0.00154
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05570	0.00009	0.00004	0	0.00010	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Bismarck, ND	Boron	0.01660	0.00001	0.00000	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.24000	0.00166	0.00078	0	0.00780	0.00564	0	0.00051	0.00003	0.00001	0	0.00200	0.00400	0	NA	0.00604
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	39.40000	0.01030	0.00485	0	0.05670	0.04030	0	0.00400	0.00008	0.00002	0	0.00610	0.01000	0	NA	0.01620
	Micronutrients	0.02480	0.00001	0.00000	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00159	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.58000	0.00259	0.00122	0	0.01260	0.00922	0	0.00090	0.00004	0.00001	0	0.00200	0.00500	0	NA	0.00705
	NPK for P2O5	2.68000	0.00082	0.00039	0	0.00391	0.00283	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
	P2O5 - 1	4.51000	0.00127	0.00060	0	0.00653	0.00465	0	0.00050	0.00002	0.00001	0	0.00100	0.00300	0	NA	0.00403
	Potash	0.01690	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.33000	0.00067	0.00032	0	0.00336	0.00243	0	0.00020	0.00001	0.00000	0	0.00050	0.00100	0	NA	0.00151
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06140	0.00002	0.00001	0	0.00009	0.00006	0	0.00001	0.00000	0.00000	0	0.00002	0.00004	0	NA	0.00006
	Boise, ID	Boron	0.01740	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.64000	0.00534	0.00252	0	0.00897	0.00686	0	0.00060	0.00010	0.00003	0	0.00200	0.00500	0	NA	0.00713
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		41.00000	0.03840	0.01810	0	0.06390	0.04840	0	0.00400	0.00030	0.00008	0	0.00700	0.02000	0	NA	0.02738
Micronutrients		0.02640	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00169	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.97000	0.00826	0.00389	0	0.01450	0.01110	0	0.00090	0.00010	0.00004	0	0.00300	0.00600	0	NA	0.00914
NPK for P2O5		2.84000	0.00271	0.00128	0	0.00451	0.00349	0	0.00030	0.00005	0.00002	0	0.00100	0.00300	0	NA	0.00407
P2O5 - 1		4.77000	0.00446	0.00211	0	0.00762	0.00581	0	0.00050	0.00006	0.00002	0	0.00100	0.00400	0	NA	0.00508
Potash		0.01790	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.47000	0.00237	0.00112	0	0.00394	0.00299	0	0.00030	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06470	0.00006	0.00003	0	0.00010	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Boulder, CO		Boron	0.01710	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.44000	0.00591	0.00279	0	0.00881	0.00680	0	0.00060	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	40.70000	0.03520	0.01660	0	0.06450	0.04840	0	0.00400	0.00030	0.00008	0	0.00700	0.02000	0	NA	0.02738
	Micronutrients	0.02600	0.00003	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00165	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.88000	0.00882	0.00416	0	0.01440	0.01110	0	0.00090	0.00010	0.00004	0	0.00300	0.00600	0	NA	0.00914
	NPK for P2O5	2.80000	0.00302	0.00142	0	0.00447	0.00340	0	0.00030	0.00005	0.00002	0	0.00100	0.00300	0	NA	0.00407
	P2O5 - 1	4.72000	0.00457	0.00216	0	0.00753	0.00579	0	0.00050	0.00007	0.00002	0	0.00100	0.00400	0	NA	0.00509
	Potash	0.01770	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.37000	0.00248	0.00117	0	0.00376	0.00294	0	0.00021	0.00003	0.00001	0	0.00050	0.00100	0	NA	0.00154
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06400	0.00007	0.00003	0	0.00010	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Casper, WY	Boron	0.01670	0.00001	0.00000	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.33000	0.00183	0.00086	0	0.00782	0.00565	0	0.00060	0.00004	0.00001	0	0.00200	0.00400	0	NA	0.00605
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	38.90000	0.01190	0.00560	0	0.05750	0.04040	0	0.00400	0.00009	0.00003	0	0.00700	0.01000	0	NA	0.01712
	Micronutrients	0.02520	0.00001	0.00000	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00161	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.67000	0.00291	0.00137	0	0.01280	0.00948	0	0.00090	0.00004	0.00002	0	0.00200	0.00500	0	NA	0.00706
	NPK for P2O5	2.71000	0.00093	0.00044	0	0.00400	0.00291	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
	P2O5 - 1	4.54000	0.00148	0.00070	0	0.00673	0.00496	0	0.00041	0.00002	0.00001	0	0.00100	0.00300	0	NA	0.00403
	Potash	0.01720	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.37000	0.00079	0.00037	0	0.00342	0.00252	0	0.00020	0.00001	0.00000	0	0.00050	0.00100	0	NA	0.00151
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06220	0.00002	0.00001	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00004	0	NA	0.00006
	Charleston, SC	Boron	0.01500	0.00002	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		4.83000	0.00642	0.00303	0	0.00801	0.00629	0	0.00050	0.00010	0.00003	0	0.00200	0.00500	0	NA	0.00713
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		36.00000	0.03520	0.01660	0	0.05640	0.04220	0	0.00400	0.00021	0.00009	0	0.00700	0.01000	0	NA	0.01730
Micronutrients		0.02290	0.00003	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00145	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		7.79000	0.00891	0.00420	0	0.01300	0.01000	0	0.00080	0.00010	0.00004	0	0.00200	0.00600	0	NA	0.00814
NPK for P2O5		2.43000	0.00311	0.00147	0	0.00394	0.00312	0	0.00030	0.00005	0.00002	0	0.00090	0.00200	0	NA	0.00297
P2O5 - 1		4.14000	0.00471	0.00222	0	0.00680	0.00516	0	0.00040	0.00007	0.00002	0	0.00100	0.00300	0	NA	0.00409
Potash		0.01560	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.11000	0.00226	0.00106	0	0.00351	0.00274	0	0.00020	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.05660	0.00007	0.00003	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Chicago, IL		Boron	0.01600	0.00004	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.12000	0.01100	0.00517	0	0.00938	0.00769	0	0.00050	0.00020	0.00006	0	0.00200	0.00600	0	NA	0.00826
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	38.90000	0.06000	0.02830	0	0.07180	0.05830	0	0.00400	0.00060	0.00020	0	0.00800	0.02000	0	NA	0.02880
	Micronutrients	0.02440	0.00005	0.00002	0	0.00004	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00154	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.41000	0.01680	0.00792	0	0.01520	0.01240	0	0.00090	0.00020	0.00008	0	0.00300	0.00700	0	NA	0.01028
	NPK for P2O5	2.61000	0.00579	0.00273	0	0.00474	0.00393	0	0.00030	0.00010	0.00003	0	0.00100	0.00300	0	NA	0.00413
	P2O5 - 1	4.31000	0.00830	0.00391	0	0.00783	0.00631	0	0.00040	0.00010	0.00004	0	0.00100	0.00400	0	NA	0.00514
	Potash	0.01610	0.00003	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	S as Nutrient	2.25000	0.00426	0.00201	0	0.00399	0.00326	0	0.00020	0.00004	0.00001	0	0.00050	0.00100	0	NA	0.00155
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05950	0.00012	0.00006	0	0.00010	0.00009	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Cleveland, OH	Boron	0.01610	0.00004	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.13000	0.01080	0.00511	0	0.00923	0.00755	0	0.00050	0.00020	0.00006	0	0.00200	0.00600	0	NA	0.00826
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	37.60000	0.07700	0.03630	0	0.06950	0.05700	0	0.00400	0.00060	0.00020	0	0.00710	0.02000	0	NA	0.02790
	Micronutrients	0.02420	0.00005	0.00002	0	0.00004	0.00004	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00154	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.20000	0.01680	0.00791	0	0.01500	0.01230	0	0.00090	0.00020	0.00009	0	0.00300	0.00700	0	NA	0.01029
	NPK for P2O5	2.60000	0.00552	0.00261	0	0.00470	0.00389	0	0.00030	0.00010	0.00003	0	0.00100	0.00300	0	NA	0.00413
	P2O5 - 1	4.37000	0.00889	0.00419	0	0.00799	0.00640	0	0.00040	0.00010	0.00005	0	0.00100	0.00400	0	NA	0.00515
	Potash	0.01650	0.00003	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	S as Nutrient	2.25000	0.00468	0.00221	0	0.00410	0.00336	0	0.00020	0.00005	0.00002	0	0.00060	0.00200	0	NA	0.00267
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06020	0.00012	0.00006	0	0.00011	0.00009	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
	Fresno, CA	Boron	0.01700	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.33000	0.00427	0.00201	0	0.00843	0.00646	0	0.00060	0.00009	0.00003	0	0.00200	0.00500	0	NA	0.00712
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		39.90000	0.03100	0.01460	0	0.06130	0.04350	0	0.00400	0.00020	0.00007	0	0.00700	0.02000	0	NA	0.02727
Micronutrients		0.02550	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00163	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.94000	0.00686	0.00324	0	0.01400	0.01050	0	0.00090	0.00010	0.00003	0	0.00200	0.00600	0	NA	0.00813
NPK for P2O5		2.77000	0.00223	0.00105	0	0.00427	0.00324	0	0.00030	0.00004	0.00001	0	0.00100	0.00210	0	NA	0.00315
P2O5 - 1		4.64000	0.00364	0.00172	0	0.00745	0.00557	0	0.00050	0.00005	0.00002	0	0.00100	0.00400	0	NA	0.00507
Potash		0.01740	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.35000	0.00182	0.00086	0	0.00364	0.00276	0	0.00020	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06310	0.00005	0.00002	0	0.00010	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Grand Island, NE		Boron	0.01700	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.36000	0.00224	0.00106	0	0.00804	0.00585	0	0.00060	0.00004	0.00001	0	0.00200	0.00400	0	NA	0.00605
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	39.70000	0.01410	0.00667	0	0.06080	0.04360	0	0.00400	0.00010	0.00003	0	0.00700	0.01000	0	NA	0.01713
	Micronutrients	0.02530	0.00001	0.00000	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00162	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.73000	0.00349	0.00165	0	0.01280	0.00948	0	0.00090	0.00005	0.00002	0	0.00200	0.00500	0	NA	0.00707
	NPK for P2O5	2.74000	0.00113	0.00053	0	0.00399	0.00300	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
	P2O5 - 1	4.60000	0.00179	0.00085	0	0.00697	0.00504	0	0.00050	0.00003	0.00001	0	0.00100	0.00300	0	NA	0.00404
	Potash	0.01730	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.39000	0.00093	0.00044	0	0.00350	0.00252	0	0.00020	0.00001	0.00000	0	0.00050	0.00100	0	NA	0.00151
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06330	0.00003	0.00001	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Harrisburg, PA	Boron	0.01590	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.06000	0.00440	0.00208	0	0.00796	0.00608	0	0.00050	0.00008	0.00003	0	0.00200	0.00500	0	NA	0.00711
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	38.10000	0.03140	0.01480	0	0.06080	0.04570	0	0.00400	0.00020	0.00006	0	0.00700	0.01000	0	NA	0.01726
	Micronutrients	0.02430	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00152	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.28000	0.00718	0.00339	0	0.01300	0.00993	0	0.00090	0.00010	0.00004	0	0.00200	0.00600	0	NA	0.00814
	NPK for P2O5	2.60000	0.00220	0.00104	0	0.00402	0.00305	0	0.00030	0.00004	0.00001	0	0.00090	0.00200	0	NA	0.00295
	P2O5 - 1	4.30000	0.00360	0.00170	0	0.00693	0.00518	0	0.00040	0.00005	0.00002	0	0.00100	0.00300	0	NA	0.00407
	Potash	0.01620	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.22000	0.00190	0.00090	0	0.00342	0.00263	0	0.00020	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05930	0.00005	0.00002	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
	Hartford, CT	Boron	0.01540	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		4.96000	0.00375	0.00177	0	0.00760	0.00573	0	0.00050	0.00006	0.00002	0	0.00200	0.00400	0	NA	0.00608
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		37.40000	0.02410	0.01140	0	0.05720	0.04240	0	0.00400	0.00020	0.00005	0	0.00600	0.01000	0	NA	0.01625
Micronutrients		0.02310	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00146	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		7.80000	0.00531	0.00250	0	0.01220	0.00925	0	0.00080	0.00008	0.00003	0	0.00200	0.00500	0	NA	0.00711
NPK for P2O5		2.45000	0.00180	0.00085	0	0.00379	0.00293	0	0.00030	0.00003	0.00001	0	0.00090	0.00200	0	NA	0.00294
P2O5 - 1		4.17000	0.00267	0.00126	0	0.00651	0.00487	0	0.00040	0.00004	0.00001	0	0.00100	0.00300	0	NA	0.00405
Potash		0.01580	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.17000	0.00150	0.00071	0	0.00335	0.00247	0	0.00020	0.00002	0.00000	0	0.00040	0.00100	0	NA	0.00142
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.05680	0.00004	0.00002	0	0.00009	0.00006	0	0.00001	0.00000	0.00000	0	0.00002	0.00004	0	NA	0.00006
Houston, TX		Boron	0.01540	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	4.92000	0.00291	0.00137	0	0.00745	0.00548	0	0.00050	0.00006	0.00002	0	0.00200	0.00400	0	NA	0.00608
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	35.90000	0.01600	0.00757	0	0.05400	0.04090	0	0.00400	0.00010	0.00004	0	0.00600	0.01000	0	NA	0.01614
	Micronutrients	0.02330	0.00001	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00147	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	7.88000	0.00466	0.00220	0	0.01240	0.00928	0	0.00080	0.00007	0.00002	0	0.00200	0.00500	0	NA	0.00709
	NPK for P2O5	2.49000	0.00160	0.00075	0	0.00374	0.00277	0	0.00030	0.00003	0.00001	0	0.00081	0.00200	0	NA	0.00285
	P2O5 - 1	4.20000	0.00229	0.00108	0	0.00638	0.00472	0	0.00040	0.00003	0.00001	0	0.00100	0.00300	0	NA	0.00404
	Potash	0.01560	0.00001	0.00000	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.18000	0.00112	0.00053	0	0.00338	0.00248	0	0.00020	0.00001	0.00000	0	0.00040	0.00100	0	NA	0.00141
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05760	0.00003	0.00002	0	0.00009	0.00006	0	0.00001	0.00000	0.00000	0	0.00002	0.00004	0	NA	0.00006

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Huntington, WV	Boron	0.01570	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.07000	0.00564	0.00266	0	0.00824	0.00642	0	0.00050	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	37.90000	0.03980	0.01880	0	0.06120	0.04630	0	0.00400	0.00030	0.00009	0	0.00700	0.01100	0	NA	0.01839
	Micronutrients	0.02400	0.00003	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00154	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.13000	0.00897	0.00423	0	0.01330	0.01040	0	0.00081	0.00010	0.00005	0	0.00200	0.00600	0	NA	0.00815
	NPK for P2O5	2.55000	0.00295	0.00139	0	0.00422	0.00329	0	0.00030	0.00006	0.00002	0	0.00091	0.00200	0	NA	0.00299
	P2O5 - 1	4.30000	0.00481	0.00227	0	0.00711	0.00542	0	0.00040	0.00007	0.00002	0	0.00100	0.00300	0	NA	0.00409
	Potash	0.01600	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.26000	0.00248	0.00117	0	0.00352	0.00275	0	0.00020	0.00003	0.00001	0	0.00050	0.00100	0	NA	0.00154
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05920	0.00007	0.00003	0	0.00010	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
	Las Vegas, NV	Boron	0.01680	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.41000	0.00188	0.00089	0	0.00795	0.00586	0	0.00060	0.00003	0.00001	0	0.00200	0.00400	0	NA	0.00604
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		41.00000	0.01240	0.00584	0	0.05900	0.04210	0	0.00400	0.00010	0.00003	0	0.00700	0.01000	0	NA	0.01713
Micronutrients		0.02550	0.00001	0.00000	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00163	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.74000	0.00297	0.00140	0	0.01290	0.00952	0	0.00090	0.00004	0.00002	0	0.00200	0.00500	0	NA	0.00706
NPK for P2O5		2.75000	0.00096	0.00045	0	0.00407	0.00295	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
P2O5 - 1		4.54000	0.00144	0.00068	0	0.00684	0.00492	0	0.00050	0.00002	0.00001	0	0.00100	0.00300	0	NA	0.00403
Potash		0.01730	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.40000	0.00077	0.00036	0	0.00348	0.00247	0	0.00020	0.00001	0.00000	0	0.00050	0.00100	0	NA	0.00151
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06350	0.00002	0.00001	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Los Angeles, CA		Boron	0.01660	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.36000	0.00544	0.00257	0	0.00857	0.00661	0	0.00060	0.00010	0.00003	0	0.00200	0.00500	0	NA	0.00713
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	40.30000	0.03420	0.01610	0	0.06460	0.04950	0	0.00400	0.00030	0.00008	0	0.00700	0.02000	0	NA	0.02738
	Micronutrients	0.02550	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00161	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.57000	0.00841	0.00397	0	0.01370	0.01070	0	0.00090	0.00010	0.00005	0	0.00200	0.00600	0	NA	0.00815
	NPK for P2O5	2.69000	0.00267	0.00126	0	0.00435	0.00332	0	0.00030	0.00005	0.00002	0	0.00100	0.00300	0	NA	0.00407
	P2O5 - 1	4.61000	0.00441	0.00208	0	0.00742	0.00570	0	0.00041	0.00006	0.00002	0	0.00100	0.00310	0	NA	0.00418
	Potash	0.01690	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.34000	0.00233	0.00110	0	0.00377	0.00277	0	0.00020	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06280	0.00006	0.00003	0	0.00010	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Memphis, TN	Boron	0.01480	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	4.77000	0.00857	0.00404	0	0.00849	0.00677	0	0.00050	0.00020	0.00005	0	0.00200	0.00500	0	NA	0.00725
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	33.90000	0.05750	0.02710	0	0.05830	0.04780	0	0.00400	0.00040	0.00010	0	0.00700	0.02000	0	NA	0.02750
	Micronutrients	0.02240	0.00004	0.00002	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00143	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	7.68000	0.01340	0.00630	0	0.01350	0.01090	0	0.00080	0.00020	0.00007	0	0.00200	0.00610	0	NA	0.00837
	NPK for P2O5	2.44000	0.00430	0.00203	0	0.00422	0.00339	0	0.00030	0.00008	0.00003	0	0.00091	0.00300	0	NA	0.00402
	P2O5 - 1	3.98000	0.00687	0.00324	0	0.00709	0.00574	0	0.00040	0.00010	0.00004	0	0.00100	0.00400	0	NA	0.00514
	Potash	0.01530	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.11000	0.00362	0.00171	0	0.00361	0.00288	0	0.00020	0.00004	0.00001	0	0.00050	0.00100	0	NA	0.00155
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05510	0.00010	0.00005	0	0.00010	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
	Miami, FL	Boron	0.01480	0.00001	0.00000	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA
Gypsum Products		4.58000	0.00203	0.00096	0	0.00680	0.00501	0	0.00050	0.00003	0.00001	0	0.00110	0.00400	0	NA	0.00514
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		31.40000	0.00710	0.00335	0	0.04590	0.03300	0	0.00300	0.00007	0.00002	0	0.00500	0.01000	0	NA	0.01509
Micronutrients		0.02050	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00000	0.00001	0	NA	0.00001
Mn		0.00137	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		7.27000	0.00313	0.00148	0	0.01070	0.00793	0	0.00070	0.00004	0.00002	0	0.00200	0.00400	0	NA	0.00606
NPK for P2O5		2.29000	0.00099	0.00047	0	0.00352	0.00259	0	0.00020	0.00002	0.00001	0	0.00080	0.00200	0	NA	0.00283
P2O5 - 1		3.79000	0.00163	0.00077	0	0.00552	0.00395	0	0.00040	0.00002	0.00001	0	0.00090	0.00300	0	NA	0.00393
Potash		0.01360	0.00001	0.00000	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		1.92000	0.00069	0.00033	0	0.00282	0.00204	0	0.00020	0.00001	0.00000	0	0.00040	0.00090	0	NA	0.00131
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.05130	0.00002	0.00001	0	0.00008	0.00006	0	0.00001	0.00000	0.00000	0	0.00001	0.00004	0	NA	0.00005
Minneapolis, MN		Boron	0.01660	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.30000	0.00858	0.00405	0	0.00901	0.00717	0	0.00060	0.00020	0.00005	0	0.00200	0.00600	0	NA	0.00825
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	39.30000	0.05590	0.02640	0	0.06660	0.05260	0	0.00400	0.00050	0.00010	0	0.00700	0.02000	0	NA	0.02760
	Micronutrients	0.02490	0.00004	0.00002	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00158	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.59000	0.01340	0.00633	0	0.01470	0.01160	0	0.00090	0.00020	0.00007	0	0.00300	0.00700	0	NA	0.01027
	NPK for P2O5	2.68000	0.00422	0.00199	0	0.00453	0.00362	0	0.00030	0.00007	0.00002	0	0.00100	0.00300	0	NA	0.00409
	P2O5 - 1	4.46000	0.00674	0.00318	0	0.00779	0.00627	0	0.00050	0.00010	0.00003	0	0.00100	0.00400	0	NA	0.00513
	Potash	0.01690	0.00003	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	S as Nutrient	2.34000	0.00351	0.00166	0	0.00408	0.00317	0	0.00020	0.00004	0.00001	0	0.00050	0.00100	0	NA	0.00155
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06210	0.00010	0.00005	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008



**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Philadelphia, PA	Boron	0.01550	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	4.97000	0.00424	0.00200	0	0.00785	0.00594	0	0.00050	0.00008	0.00003	0	0.00200	0.00500	0	NA	0.00711
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	37.60000	0.02490	0.01180	0	0.05610	0.04210	0	0.00400	0.00020	0.00007	0	0.00600	0.01000	0	NA	0.01627
	Micronutrients	0.02350	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00149	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.01000	0.00635	0.00300	0	0.01250	0.00958	0	0.00080	0.00009	0.00003	0	0.00200	0.00600	0	NA	0.00812
	NPK for P2O5	2.54000	0.00216	0.00102	0	0.00394	0.00300	0	0.00030	0.00004	0.00001	0	0.00090	0.00200	0	NA	0.00295
	P2O5 - 1	4.32000	0.00348	0.00164	0	0.00695	0.00517	0	0.00040	0.00005	0.00002	0	0.00100	0.00300	0	NA	0.00407
	Potash	0.01590	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.15000	0.00169	0.00080	0	0.00342	0.00255	0	0.00020	0.00002	0.00001	0	0.00050	0.00100	0	NA	0.00153
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05760	0.00005	0.00002	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
	Phoenix, AZ	Boron	0.01710	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.47000	0.00232	0.00110	0	0.00814	0.00600	0	0.00060	0.00004	0.00001	0	0.00200	0.00500	0	NA	0.00705
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		39.10000	0.01410	0.00667	0	0.05450	0.04020	0	0.00400	0.00010	0.00003	0	0.00700	0.01000	0	NA	0.01713
Micronutrients		0.02540	0.00001	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00164	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.88000	0.00351	0.00166	0	0.01320	0.00967	0	0.00090	0.00005	0.00002	0	0.00200	0.00600	0	NA	0.00807
NPK for P2O5		2.77000	0.00119	0.00056	0	0.00412	0.00303	0	0.00030	0.00002	0.00001	0	0.00090	0.00200	0	NA	0.00293
P2O5 - 1		4.65000	0.00200	0.00095	0	0.00708	0.00513	0	0.00050	0.00003	0.00001	0	0.00100	0.00300	0	NA	0.00404
Potash		0.01740	0.00001	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.43000	0.00100	0.00047	0	0.00351	0.00254	0	0.00020	0.00001	0.00000	0	0.00050	0.00100	0	NA	0.00151
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06390	0.00003	0.00001	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Portland, ME		Boron	0.01470	0.00002	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	4.68000	0.00702	0.00331	0	0.00803	0.00632	0	0.00050	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	36.00000	0.04390	0.02070	0	0.05760	0.04440	0	0.00400	0.00040	0.00010	0	0.00600	0.01100	0	NA	0.01750
	Micronutrients	0.02230	0.00003	0.00002	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00140	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	7.68000	0.01140	0.00537	0	0.01310	0.01050	0	0.00080	0.00020	0.00005	0	0.00200	0.00600	0	NA	0.00825
	NPK for P2O5	2.36000	0.00366	0.00173	0	0.00401	0.00315	0	0.00030	0.00006	0.00002	0	0.00090	0.00200	0	NA	0.00298
	P2O5 - 1	3.98000	0.00560	0.00264	0	0.00685	0.00538	0	0.00040	0.00008	0.00003	0	0.00100	0.00300	0	NA	0.00411
	Potash	0.01490	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.07000	0.00290	0.00137	0	0.00345	0.00271	0	0.00020	0.00003	0.00001	0	0.00050	0.00100	0	NA	0.00154
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05500	0.00008	0.00004	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg-DW)	above-ground vegetable conc (mg/kg-DW)	below-ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below-ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
Raleigh-Durham, NC	Boron	0.01540	0.00003	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	4.94000	0.00986	0.00465	0	0.00882	0.00716	0	0.00050	0.00020	0.00006	0	0.00200	0.00500	0	NA	0.00726
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	36.70000	0.05670	0.02670	0	0.05990	0.04710	0	0.00400	0.00050	0.00010	0	0.00700	0.02000	0	NA	0.02760
	Micronutrients	0.02340	0.00004	0.00002	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00147	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	7.97000	0.01510	0.00712	0	0.01440	0.01170	0	0.00080	0.00020	0.00007	0	0.00300	0.00700	0	NA	0.01027
	NPK for P2O5	2.52000	0.00498	0.00235	0	0.00443	0.00363	0	0.00030	0.00008	0.00003	0	0.00100	0.00300	0	NA	0.00411
	P2O5 - 1	4.20000	0.00791	0.00373	0	0.00766	0.00620	0	0.00040	0.00010	0.00004	0	0.00100	0.00400	0	NA	0.00514
	Potash	0.01590	0.00003	0.00002	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	S as Nutrient	2.20000	0.00384	0.00181	0	0.00403	0.00332	0	0.00020	0.00004	0.00001	0	0.00050	0.00100	0	NA	0.00155
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.05720	0.00011	0.00005	0	0.00010	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00006	0	NA	0.00008
	Salem, OR	Boron	0.01570	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		4.89000	0.00398	0.00188	0	0.00774	0.00591	0	0.00050	0.00007	0.00002	0	0.00200	0.00400	0	NA	0.00609
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		36.80000	0.02800	0.01320	0	0.05610	0.04160	0	0.00400	0.00020	0.00006	0	0.00600	0.01000	0	NA	0.01626
Micronutrients		0.02370	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00148	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.06000	0.00614	0.00289	0	0.01260	0.00938	0	0.00080	0.00009	0.00003	0	0.00200	0.00510	0	NA	0.00722
NPK for P2O5		2.51000	0.00208	0.00098	0	0.00393	0.00297	0	0.00030	0.00003	0.00001	0	0.00090	0.00200	0	NA	0.00294
P2O5 - 1		4.22000	0.00311	0.00147	0	0.00659	0.00493	0	0.00040	0.00005	0.00002	0	0.00100	0.00300	0	NA	0.00407
Potash		0.01570	0.00001	0.00001	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.17000	0.00159	0.00075	0	0.00333	0.00256	0	0.00020	0.00002	0.00001	0	0.00041	0.00100	0	NA	0.00144
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.05840	0.00004	0.00002	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
Salt Lake City, UT		Boron	0.01740	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
	Gypsum Products	5.51000	0.00635	0.00299	0	0.00911	0.00703	0	0.00060	0.00010	0.00004	0	0.00200	0.00500	0	NA	0.00714
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	38.10000	0.04220	0.01990	0	0.06220	0.04810	0	0.00400	0.00031	0.00009	0	0.00710	0.02000	0	NA	0.02750
	Micronutrients	0.02590	0.00003	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00167	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.89000	0.00992	0.00468	0	0.01460	0.01150	0	0.00090	0.00010	0.00005	0	0.00300	0.00700	0	NA	0.01015
	NPK for P2O5	2.83000	0.00339	0.00160	0	0.00462	0.00360	0	0.00030	0.00006	0.00002	0	0.00100	0.00300	0	NA	0.00408
	P2O5 - 1	4.66000	0.00520	0.00245	0	0.00765	0.00585	0	0.00050	0.00008	0.00003	0	0.00100	0.00400	0	NA	0.00511
	Potash	0.01790	0.00002	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	S as Nutrient	2.41000	0.00276	0.00130	0	0.00388	0.00299	0	0.00030	0.00003	0.00001	0	0.00050	0.00100	0	NA	0.00154
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06540	0.00007	0.00003	0	0.00011	0.00008	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007

**90th Percentile Media Concentrations and Risks from Application of Fertilizer Products  
Vanadium (Adult)**

Climate Region	Product	soil conc (mg/kg)	fruit conc (mg/kg- DW)	above- ground vegetable conc (mg/kg- DW)	below- ground veg conc (mg/kg)	beef conc (mg/kg)	milk conc (mg/kg)	fish conc (mg/kg)	Soil Ingestion	Fruit Ingestion	Vegetable Ingestion	Below- ground Vegetable Ingestion	Beef Ingestion	Milk Ingestion	Fish Ingestion	Direct Inhalation	All Indirect Pathways Combined <sup>1</sup>
San Francisco, CA	Boron	0.01660	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Gypsum Products	5.33000	0.00349	0.00165	0	0.00815	0.00607	0	0.00060	0.00007	0.00002	0	0.00200	0.00500	0	NA	0.00709
	Iron	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Liming Materials	39.30000	0.01950	0.00920	0	0.06070	0.04410	0	0.00400	0.00020	0.00005	0	0.00700	0.01000	0	NA	0.01725
	Micronutrients	0.02520	0.00002	0.00001	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
	Mn	0.00160	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
	NPK as N	8.60000	0.00546	0.00258	0	0.01310	0.00983	0	0.00090	0.00007	0.00003	0	0.00200	0.00600	0	NA	0.00810
	NPK for P2O5	2.73000	0.00175	0.00082	0	0.00419	0.00310	0	0.00030	0.00003	0.00001	0	0.00090	0.00200	0	NA	0.00294
	P2O5 - 1	4.54000	0.00269	0.00127	0	0.00688	0.00508	0	0.00040	0.00004	0.00001	0	0.00100	0.00300	0	NA	0.00405
	Potash	0.01730	0.00001	0.00001	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
	S as Nutrient	2.31000	0.00143	0.00068	0	0.00350	0.00261	0	0.00020	0.00002	0.00000	0	0.00050	0.00100	0	NA	0.00152
	S as Ph	NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
	Zinc	0.06250	0.00004	0.00002	0	0.00009	0.00007	0	0.00001	0.00000	0.00000	0	0.00002	0.00005	0	NA	0.00007
	Winnemucca, NV	Boron	0.01700	0.00000	0.00000	0	0.00002	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA
Gypsum Products		5.36000	0.00087	0.00041	0	0.00772	0.00547	0	0.00060	0.00002	0.00001	0	0.00200	0.00400	0	NA	0.00603
Iron		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Liming Materials		39.40000	0.00575	0.00271	0	0.05530	0.03920	0	0.00400	0.00004	0.00001	0	0.00600	0.01000	0	NA	0.01605
Micronutrients		0.02560	0.00000	0.00000	0	0.00004	0.00003	0	0.00000	0.00000	0.00000	0	0.00001	0.00002	0	NA	0.00003
Mn		0.00163	0.00000	0.00000	0	0.00000	0.00000	0	0.00000	0.00000	0.00000	0	0.00000	0.00000	0	NA	0.00000
NPK as N		8.81000	0.00137	0.00064	0	0.01260	0.00894	0	0.00090	0.00002	0.00001	0	0.00200	0.00500	0	NA	0.00703
NPK for P2O5		2.75000	0.00045	0.00021	0	0.00400	0.00283	0	0.00030	0.00001	0.00000	0	0.00090	0.00200	0	NA	0.00291
P2O5 - 1		4.74000	0.00074	0.00035	0	0.00679	0.00484	0	0.00050	0.00001	0.00000	0	0.00100	0.00300	0	NA	0.00401
Potash		0.01750	0.00000	0.00000	0	0.00003	0.00002	0	0.00000	0.00000	0.00000	0	0.00001	0.00001	0	NA	0.00002
S as Nutrient		2.45000	0.00036	0.00017	0	0.00341	0.00247	0	0.00020	0.00000	0.00000	0	0.00050	0.00100	0	NA	0.00151
S as Ph		NA	NA	NA	NA	NA	NA	0	NA	NA	NA	NA	NA	NA	0	NA	NA
Zinc		0.06330	0.00001	0.00000	0	0.00009	0.00006	0	0.00001	0.00000	0.00000	0	0.00002	0.00004	0	NA	0.00006

<sup>1</sup> All Indirect Pathways Combined includes Fruit, Vegetable, Below-ground Vegetable, Beef, and Milk Ingestion.

Numbers less than 0.00001 appear as a default of 0.00000.